

Appl. No. 10/027,462  
Resp./Amdt. dated May 15, 2006  
Reply to Office Action of 03/31/2006

**REMARKS/ARGUMENTS**

There are no amendments to the specification or drawings herein.

In the Claims, Claims 1-12 and 14-35 are pending. Claim 13 was previously canceled. Claims 5-12, 14-20 and 31-33 are allowed. Claims 1, 2, 21, 23, 25-27, 30, 34 and 35 are rejected and Claims 3, 4, 22, 24, 28 and 29 are objected to. Claims 21, 34 and 35 are amended herein. Reconsideration is respectfully requested.

Applicant appreciates the Examiner acceptance and entry of amendments to the claims offered in a previous Response/Amendment filed January 20, 2006 (hereinafter 'Previous Response'). Applicant further appreciates the Examiner's withdrawal of a rejection of Claims 4 and 9 under 35 U.S.C. 103(a) as being unpatentable over Zwirn et al., U.S. Patent No. 4,789,898(hereinafter 'Zwirn et al.'), further in view of Applicant's allegedly admitted prior art.

Applicant has amended Claims 21, 34 and 35 herein for consideration. Specifically, Claim 21 is amended to clarify a specific meaning of "the image comparison-based determination" recited therein. Support for the amendment of Claim 21 is provided by Applicant's specification, as originally filed, as well as Claims 1 and 26. Applicant has amended Claims 34 and 35 to delete "one or both of" and to instead recite, "the determination being either image comparison-based or edge density-based and image comparison-based". Support for the amendments of Claims 34 and 35 is provided by Applicant's specification and at least Claims 1 and 26, as originally filed.

Applicant respectfully requests entry and consideration of the amendments to Claims 21, 34 and 35. In particular, as discussed hereinbelow, the amendments to Claims 21, 34 and 35 clearly place the claims in condition for allowance in view of the prior art of record. As such, Applicant respectfully submits that the Examiner is obliged to enter the above amendments. Furthermore, as the above amendments merely act to place Claims 21, 34 and 35 in condition for allowance, these amendments do not raise new issues that were not already considered by the Examiner (e.g., see Claim 1) and respectfully cannot, by themselves, necessitate a new search.

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### Telephone Interview Summary

A series of telephone interviews was conducted on May 8, 2006. Participating in a first and second of the telephone interviews were Examiner Manav Seth (hereinafter ‘the Examiner’) and the undersigned, Mr. J. Michael Johnson. Participating in a third telephone interview was Bhavesh Mehta, SPE, and Mr. Johnson.

Mr. Johnson requested the telephone interviews to clarify the Examiner’s reasons for maintaining various rejections under 35 U.S.C. 102(b) and 35 U.S.C. 103(a) over Zwirn et al. Specifically, in a present Final Office Action (hereinafter ‘Final Action’), the Examiner contended that Applicant’s recitation of “the comparison” in Claim 1 was, “silent of what type of specific comparison is to be made”. The Examiner apparently based the finality of the rejections of at least Claims 1, 21 and 26 on the contended lack of specificity of “the comparison”, as exemplified by Claim 1.

During the first interview, Mr. Johnson expressed concern that the Examiner had apparently overlooked or ignored specific language in Claim 1 that recites, “a comparison between an image of a typical object and an image of the object created by the imaging system” (hereinafter ‘typical object comparison’) in contravention of established law. See for example, *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970) (“[a]ll words in a claim must be considered in judging the patentability of that claim against the prior art”). Mr. Johnson noted that the aforementioned typical object comparison is the *only* comparison recited in Claim 1. As such, “the comparison” recited in Claim 1 can *only* refer to the comparison between an image of a typical object and an image of the object created by the imaging system (i.e., the typical object comparison). A similar argument was presented by Mr. Johnson for “the image comparison” recited in Claim 26.

Issues with respect to Claims 21, 34 and 35 were also discussed. Namely, the recitation in Claim 21 of an “image comparison-based determination” and an interpretation of a phrase “one or both of” appearing in Claims 34 and 35. While the only ‘image comparison-based determination’ disclosed in Applicant’s specification, as filed, concerned the aforementioned typical object comparison involving an image of a typical object, the Examiner would not agree that a meaning “image comparison-

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based determination" in Claim 21 was constrained by the specification. Regarding Claims 34 and 35, the Examiner emphasized that in evaluating the claims, only a recited "edge density-based" determination had been or need be considered with respect to the applied prior art (i.e., Zwirn et al.). The Examiner requested an opportunity to confer with his SPE regarding the issue of "the comparison" and the interview was terminated.

The Examiner initiated the second interview by placing a telephone call to Mr. Johnson. In the second interview, the Examiner acknowledged that "the comparison" appeared to refer to the typical object comparison, as recited in Claim 1. However, the Examiner was still concerned that the use of "the comparison" may have broader meaning than that argued by Applicant. The Examiner suggested that either "said" be used to replace "the" in Claims 1 and 26 with respect to "the comparison" recited therein or that a written statement confirming that "the comparison" refers to only the typical object comparison be entered into the record by Applicant.

Mr. Johnson pointed out that, according to well-established rules for claim construction, the terms "said" and "the" are entirely equivalent when referring to an element or limitation in a claim (e.g., "the lever" is equivalent to "said lever"; See MPEP 2173.05(e)). As such, substituting "said" for "the" in the claims would seem to have no consequential effect on either of the breadth or the meaning of the claims in question. Mr. Johnson further pointed out that the written statement suggested by the Examiner was already in the record and referred the Examiner to the above-referenced Previous Response. Mr. Johnson asked permission to contact Examiner Mehta and the Examiner agreed. The Examiner further agreed that if "the comparison" in Claim 1 in fact referred only to the typical object comparison, then rejections in view of any comparison allegedly disclosed by Zwirn et al. would be overcome. The interview was terminated without further agreement.

Mr. Johnson placed a call to and discussed the matter of "the comparison" with Examiner Mehta (i.e., third interview). Examiner Mehta explained that substituting "said" for "the" was only a suggestion. Examiner Mehta also indicated that he had directed Examiner Seth to reconsider Applicant's arguments of the Previous Response and to "update the search". Examiner Mehta assured Mr. Johnson that any argument

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presented in a response to the Final Action would be fully considered. The interview was terminated without further agreement.

**Remarks/Arguments regarding Present Office Action**

In the Final Action, the Examiner made final a rejection of Claims 1-2 under 35 U.S.C. 102(b) in view of Zwirn et al., U.S. Patent No. 4,789,898 (hereinafter ‘Zwirn et al.’). In a *Response to Arguments* section of the Final Action, the Examiner contended that a 2<sup>nd</sup> alternative recited in Claim 1 and chosen by the Examiner was, “completely silent of what type of specific comparison is to be made”. Specifically, according to the Examiner, the chosen 2<sup>nd</sup> alternative was, “edge density in an image of the object and the comparison”. In the telephone interviews discussed above, the Examiner indicated that the rejection of Claim 1 under 35 U.S.C. 102(b) would be overcome if “the comparison” of the 2<sup>nd</sup> alternative referred to, “a comparison between an image of a typical object and the image of the object created by the imaging system”.

Applicant traverses the rejection of Claims 1-2 on the grounds that the Examiner failed to establish a *prima facie* case of anticipation with respect to Zwirn et al. In particular, Zwirn et al. do not disclose, explicitly or implicitly, “each element of the claim under consideration” (*W.L. Gore & Associates v. Garlock*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983)) and further that Zwirn et al. do not disclose the claimed elements “arranged as in the claim” (*Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984)), as *required* by the Federal Circuit for *prima facie* anticipation under 35 U.S.C. 102.

Regarding Applicant’s base Claim 1, Zwirn et al. at least fail to disclose or suggest “the comparison” recited in the 2<sup>nd</sup> alternative wherein “the comparison” explicitly refers to (and *can only refer* to), “a comparison between an image of a typical object and an image of the object created by the imaging system”, which is actually recited in Claim 1. The Examiner stated in the telephone interviews discussed above that a statement, such as the preceding sentence above, in the written record would remove any potential ambiguity or concern on the part of the Examiner as to the meaning of “the comparison” in Claim 1. The Examiner further agreed with Applicant that Zwirn et al. do not teach or suggest at least “the comparison” being, “a

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comparison between an image of a typical object and an image of the object created by the imaging system". As such and without more, Zwirn et al. at least do not disclose, explicitly or implicitly, "each element of the claim under consideration" (*W.L. Gore & Associates v. Garlock*, cited *supra*) effectively defeating *prima facie* anticipation.

Claim 2 is dependent from and includes all of the limitations of base Claim 1. Since Zwirn et al. fail to disclose all elements of the base claim for the reasons discussed above, Zwirn et al. similarly fail to disclose all elements of dependent Claim 2 for at least the reasons given above.

Hence, the Examiner failed to show that there is, "no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention", as required by the Federal Circuit for establishing *prima facie* anticipation under 35 U.S.C. 102. *Scripps Clinic & Research Found. V. Genentech Inc.*, 927 F.2d 1565, 18 USPQ 2d 1001, 1010 (Fed. Cir. 1991). The rejection of Claims 1-2 under 35 U.S.C. 102(b) in view of Zwirn et al. is unsupported by facts in evidence and must be withdrawn. Reconsideration and withdrawal of the rejection are respectfully requested.

The Examiner made final a rejection of Claims 21, 23, 26-27 and 34-35 under 35 U.S.C. 103(a) as being unpatentable over Zwirn et al. further in view of Onoguchi et al., U.S. Patent No. 6,067,164 (hereinafter 'Onoguchi et al.'). Applicant respectfully traverses the rejection under 35 U.S.C. 103(a) on the grounds that the Examiner failed to establish and properly support a *prima facie* case of obviousness with respect to Zwirn et al. further in view of Onoguchi et al. (hereinafter 'the references').

Regarding base Claim 21, as amended herein, the Examiner has not shown that the references in combination teach or suggest all of the claim limitations recited therein. For example, Zwirn et al. combined with Onoguchi et al. at least do not disclose or suggest determining an optimum focus position where, "the determination" is "either an *image comparison-based* determination or an *edge-density-based* determination *and* the *image comparison-based* determination", as defined in Applicant's specification and recited in amended Claim 21 (*emphasis added*). In particular, "an *image comparison-based* determination" recited in Claim

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21, as originally filed, is defined in Applicant's specification to comprise a comparison between an image of a typical object and an image of the object created by the imaging system. According to the courts, the Examiner is obliged to employ Applicant's definition of claim terms when an explicit definition is provided pursuant to Applicant's statutory right to be his/her own lexicographer. See *Toro Co. v. White Consolidated Industries Inc.*, 199 F.3d 1295, 1301, 53 USPQ2d 1065, 1069 (Fed. Cir. 1999). Also see MPEP §2173.05(a)(III).

That notwithstanding and in the interest of furthering the prosecution and pursuant to the above-discussed telephone interviews, Applicant has amended Claim 21 herein to further clarify a meaning of, "the image comparison-based determination" in the claim essentially as a 'typical object comparison'. Specifically, as discussed hereinabove, Zwirn et al. do not disclose or even suggest such an image comparison-based determination comprising the typical object comparison. Onoguchi et al. fail to add the claim limitations that are lacking in the disclosure of Zwirn et al. As such, the combination of Zwirn et al. and Onoguchi et al. at least fail to disclose or suggest all of the claim limitation recited in amended Claim 21, as required by the courts for establishing *prima facie* obviousness. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).

Regarding Claim 26, the Examiner failed to show that the combined references teach or suggest all of the claim limitations recited therein. For example, Zwirn et al. combined with Onoguchi et al. at least do not disclose or suggest, "an *image comparison* of an image of the object created by the imaging system to an image of a typical object in a set of images of the typical object or both of an edge density determination and *the image comparison* to determine an optimum focus position for imaging the object", as defined by Applicant and recited in Applicant's Claim 26 (*emphasis added*). In particular, "the image comparison" specifically refers to only "an *image comparison* of an image of the object created by the imaging system to an image of a typical object in a set of images of the typical object" and cannot refer to anything else. As was similarly discussed above relative to Claim 1, "the image comparison" in the clause following the "or both" has but one legitimate interpretation in Claim 26, namely the image comparison involving the typical object

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recited in the clause preceding the “or both”. Zwirn et al. clearly do not disclose or suggest such an image comparison, as effectively admitted by the Examiner.

Onoguchi et al. fail to add the claim limitations that are lacking in the disclosure of Zwirn et al. Specifically, Onoguchi et al. fail to disclose or suggest “the image comparison”, as defined in Applicant’s specification and recited in Applicant’s Claim 26. As such, the combination of Zwirn et al. and Onoguchi et al. fails to disclose or suggest all of the claim limitations recited in base Claim 26. The combined references failing to teach or suggest *all* of the claim limitations, in and of itself, defeats a *prima facie* case of obviousness with respect to at least Claim 26. *In re Royka*, cited *supra*.

Regarding Claims 34 and 35, as amended herein, the Examiner has not to shown that the combined references teach or suggest all of the claim limitations recited therein. In particular, Claims 34 and 35 are amended herein to recite that the determination is, “*either* image comparison-based *or* edge density-based *and* image comparison-based” (*emphasis added*) instead of ‘one or both’ thereof, which the Examiner has agreed overcomes the disclosure of Zwirn et al. As was discussed above with respect to Claims 21 and 26, Onoguchi et al. similarly do not add the claim limitations that are lacking in the disclosure of Zwirn et al. As such, Zwirn et al. in combination with Onoguchi et al. fail to disclose or suggest all of the respective limitations of Claims 34 and 35.

Failure to show that all of the limitations are taught or suggested by the references in combination, in and of itself, defeats a *prima facie* case of obviousness with respect to Claims 34 and 35. *In re Royka*, cited *supra*. That notwithstanding, the Examiner has failed to provide a legitimate and supported suggestion or motivation to combine Zwirn et al. and Onoguchi et al. that meets the court-established criteria therefor.

In particular, as was discussed in the Previous Response without response from the Examiner in the Final Action, “[o]bviousness can *only* be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation *to do so* found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art” (*emphasis added*). MPEP

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§2143.01 *Suggestion or Motivation to Modify the References.* “[T]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art *also suggests the desirability* of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990)” (*emphasis added*). MPEP §2143.01, cited *supra*. For a motivation to combine/modify to be legitimate and therefore, be employed to support a *prima facie* case of obviousness, there must be “evidence that ‘a skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed’” (*emphasis is added*). *Ecolochem, Inc. v. Southern Calif. Edison Co.*, cited *supra*. “[E]ven when the level of skill in the art is high, the Board [or the Examiner] must identify specifically the principle, known to one of ordinary skill, which suggests the claimed combination. In other words, the Board [or the Examiner] *must explain the reasons* one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious” (*emphasis added*). *In re Rouffet*, cited *supra*.

To date, the Examiner has still failed to establish that some teaching, suggestion, or motivation existed either in the references themselves or in the knowledge of the skilled artisan, without using the teachings of Applicant’s disclosure, that would have suggested or motivated the combination and modification of the disclosure of Zwirn et al. using the disclosure of Onoguchi et al., as proposed by the Examiner. In particular, the Examiner failed to show that the suggestion or motivation is, “found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art”, as required by the courts to support *prima facie* obviousness. *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). Furthermore, the Examiner has not demonstrated that the prior art recognized the *desirability* of the proposed combination/modification. See *In re Mills*, cited *supra*. Similarly, the Examiner has not explained the reasons why the skilled artisan would have been motivated either to select the *particular references* or to combine the references as proposed by the Examiner. See *In re Rouffet*, cited *supra*. There is simply *no evidence* to support a finding that, “a skilled artisan, confronted with the same problems as the inventor

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and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed". *In re Rouffet*, cited *supra*.

Hence, the Examiner clearly has not provided a legitimate motivation to combine/modify the references in support of a *prima facie* case of obviousness. An absence of a legitimate or supported motivation to combine Zwirn et al. and Onoguchi et al. is sufficient, in-and-of-itself, to defeat a *prima facie* case of obviousness. Furthermore, given the lack of a supported and legitimate motivation to combine the respective references, *any* consideration regarding what the respective combination may or may not disclose is moot.

At least for failing to provide a legitimate motivation to combine/modify the cited references, as well as for failing to establish that all of the limitations of the rejected claims are disclosed or suggested by the cited references, the Examiner's rejection under 35 U.S.C. 103(a) of at least base Claims 21, 26, 34 and 35 lacks proper support for a *prima facie* case of obviousness, according to the courts.

Applicant respectfully reminds the Examiner that if an independent base claim is non-obvious under 35 U.S.C. 103, any claim that is dependent therefrom is likewise non-obvious. *In re Fine*, 837, F.2d, 1071, 5 USPQ 2d, 1596 (Fed. Cir. 1988). As such, having failed to establish *prima facie* obviousness with respect to base Claims 21 and 26, the Examiner has similarly failed to establish *prima facie* obviousness with respect to respectively dependent Claims 23 and 27. Thus, the rejection of Claims 21, 23, 26-27 and 34-35 under 35 U.S.C. 103(a) over Zwirn et al. and Onoguchi et al. must be withdrawn for lack of proper support. Reconsideration and withdrawal of the rejection are respectfully requested.

The Examiner rejected Claims 25 and 30 under 35 U.S.C. 103(a) as being unpatentable over Zwirn et al. further in view of Onoguchi et al., and further in view of Rooks et al., IEEE, June 5, 1999, "Development of an inspection process for ball-grid array technology using scanned-beam x-ray laminography" (hereinafter 'Rooks et al.'). As in the Previous Response, Applicant once again respectfully traverses the rejection under 35 U.S.C. 103(a) on the grounds that the Examiner failed to establish and properly support a *prima facie* case of obviousness with respect to Zwirn et al.

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further in view of Onoguchi et al. and further in view of Rooks et al. (hereinafter 'the references').

Claim 25 is dependent from and includes all of the limitations of base Claim 21, as amended above. Claim 30 is dependent from and includes all of the limitations of base Claim 26. As discussed above, a combination of Zwirn et al. and Onoguchi et al. fails to teach or suggest all of the claim limitations of base Claims 21 and 26. Rooks et al. fail to add the claim limitations that are lacking in the combination of Zwirn et al. and Onoguchi et al., such that the combination of Zwirn et al., Onoguchi et al. and Rooks et al. similarly fails to disclose or suggest all of the claim limitations of the base claims. For at least these same reasons, Zwirn et al. further in view of Onoguchi et al. and further in view of Rooks et al. fail to teach all of the limitations of either dependent Claim 25 or dependent Claim 30, as required for a finding of *prima facie* obviousness (*In re Royka*, cited *supra*), thereby defeating the *prima facie* case of obviousness with respect thereto.

Moreover, as discussed above, the Examiner has not provided a legitimate motivation to combine/modify Zwirn et al. and Onoguchi et al. As such, the combination of Zwirn et al. and Onoguchi et al. is fatally flawed. Also fatally flawed for the same reasons is the combination of Zwirn et al. and Onoguchi et al. with any other reference including, but not limited to, Rooks et al. That notwithstanding, the Examiner's motivation to combine Rooks et al. with Zwirn et al. and Onoguchi et al. similarly lacks legitimacy for essentially the same reasons given above with respect to the combination of Zwirn et al. and Onoguchi et al. See at least MPEP §2143.01, cited *supra*; *In re Mills*, cited *supra*; *In re Rouffet*, cited *supra*; and *Ecolochem, Inc. v. Southern Calif. Edison Co.*, cited *supra*.

At least for failing to provide a legitimate motivation to combine/modify, as well as for separately failing to establish that all of the limitations of the rejected claims are disclosed or suggested, the Examiner's rejection under 35 U.S.C. 103(a) lacks proper support for a *prima facie* case of obviousness according to the courts. Thus, the rejection of Claims 25 and 30 under 35 U.S.C. 103(a) over Zwirn et al. in view of Onoguchi et al. and further in view of Rooks et al. must be withdrawn. Reconsideration and withdrawal of the rejection are respectfully requested.

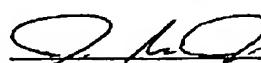
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Applicant appreciates the Examiner's allowance of Claims 5-12, 14-20 and 31-33 (Claim 13 was previously canceled). Further, Applicant appreciates the Examiner's acknowledgement of the allowability of Claims 3, 4, 22, 24, 28 and 29 if rewritten in independent form including all of the limitations of the base claim and any intervening claim. However, in light of the discussion hereinabove, Applicant respectfully declines to rewrite the claims at this time and, instead, respectfully requests reconsideration.

In summary, Claims 1-12 and 14-35 are pending. Claims 1-2, 21, 23, 25-27, 30 and 34-35 were rejected. Claims 5-12, 14-20 and 31-33 were allowed and Claims 3, 4, 22, 24, 28, and 29 were objected to. Claims 21, 34 and 35 are amended herein. For the reasons detailed above, it is respectfully submitted that Claims 1-4, 21-30 and 34-35, as amended herein, are in condition for allowance. It is respectfully requested that Claims 1-4, 21-30 and 34-35 be allowed along with allowed Claims 5-12, 14-20 and 31-33, and that the application be passed to issue at an early date.

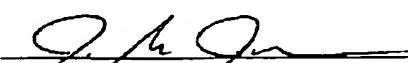
Should the Examiner's action be other than allowance of the claims, the Examiner is urged to contact the undersigned by telephone at the number given below in an effort to expedite the prosecution of this application. Should the Examiner have any questions regarding the above, the Examiner is urged to contact the undersigned or Robert T. Martin, Attorney for Applicant, Registration No. 32,426 at Agilent Technologies, Inc., telephone number (408) 553-2933.

Respectfully submitted,  
LEONID YAROSLAVKY ET AL.

By:   
J. Michael Johnson  
Attorney/Agent for Applicant(s)  
Registration No. 37,856  
(775) 849-3085

#### CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office on the date shown below.

  
J. Michael Johnson

5/15/06

Date

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